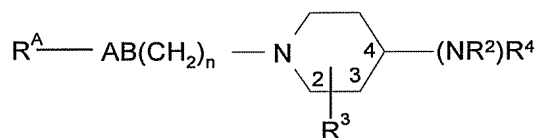


Amendments to the claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-16 (Cancelled).

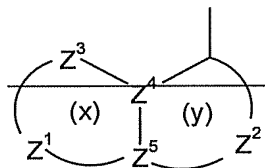
17. (Currently amended) A compound of formula (I) or a pharmaceutically acceptable derivative thereof:



(I)

wherein:

R^A is an optionally substituted bicyclic carbocyclic or heterocyclic ring system selected from quinolin-4-yl, isoquinolin-5-yl, quinolin-8-yl, thieno[3,2-b]pyridin-7-yl, 2,3-dihydro-[1,4]dioxino[2,3-b]pyridin-8-yl, quinoxalin-5-yl, isoquinolin-8-yl, [1,6]-naphthyridin-4-yl, 1,2,3,4-tetrahydroquinoxalin-5-yl or 1,2-dihydroisoquinoline-8-yl of structure:



~~containing 0-3 heteroatoms in each ring in which:~~

~~at least one of rings (x) and (y) is aromatic;~~

~~one of Z^4 and Z^5 is C or N and the other is C;~~

~~Z^3 is N, NR^{13} , O, $S(O)_x$, CO, CR^1 or CR^1R^{1a} ;~~

~~Z^1 and Z^2 are independantly a 2 or 3 atom linker group each atom of which is independently selected from N, NR^{13} , O, $S(O)_x$, CO, CR^1 and CR^1R^{1a} ;~~
~~such that wherein each ring is independently C-substituted with 0-3 groups R^1 and/or R^{1a} ;~~

~~one of Z^1 , Z^2 , Z^3 , Z^4 and Z^5 is N, one is CR^{1a} and the remainder are CH, or one of Z^1 , Z^2 , Z^3 , Z^4 and Z^5 is CR^{1a} and the remainder are CH;~~

R^1 and R^{1a} are independently hydrogen; hydroxy; (C_{1-6}) alkoxy optionally substituted by (C_{1-6}) alkoxy, amino, piperidyl, guanidino or amidino any of which is optionally N-substituted by one or two (C_{1-6}) alkyl, acyl or (C_{1-6}) alkylsulphonyl

groups, CONH₂, hydroxy, (C₁₋₆)alkylthio, heterocyclylthio, heterocyclyloxy, arylthio, aryloxy, acylthio, acyloxy or (C₁₋₆)alkylsulphonyloxy; (C₁₋₆)alkoxy-substituted(C₁₋₆)alkyl; hydroxy (C₁₋₆)alkyl; halogen; (C₁₋₆)alkyl; (C₁₋₆)alkylthio; trifluoromethyl; trifluoromethoxy; cyano; carboxy; nitro; azido; acyl; acyloxy; acylthio; (C₁₋₆)alkylsulphonyl; (C₁₋₆)alkylsulphoxide; arylsulphonyl; arylsulphoxide or an amino, piperidyl, guanidino or amidino group optionally N-substituted by one or two (C₁₋₆)alkyl, acyl or (C₁₋₆)alkylsulphonyl groups, or when Z³ and the adjacent atom are CR¹ and CR^{1a}, R¹ and R^{1a} may together represent (C₁₋₂)alkylenedioxy; provided that R¹ and R^{1a}, on the same carbon atom are not both optionally substituted hydroxy or amino;

provided that

(i) when R^A is optionally substituted quinolin-4-yl:

it is unsubstituted in the 6-position; or

it is substituted by at least one hydroxy (C₁₋₆)alkyl, cyano or carboxy group at the 2-, 5-, 6-, 7- or 8-position; or

~~it is substituted by at least one trifluoromethoxy group; or~~

~~R¹ and R^{1a} together represent (C₁₋₂)alkylenedioxy;~~

~~(ii) when R^A is optionally substituted quinazolin-4-yl, cinnolin-4-yl, 1,5-naphthyridin-4-yl, 1,7-naphthyridin-4-yl or 1,8-naphthyridin-4-yl:~~

~~it is substituted by at least one hydroxy (C₁₋₆)alkyl, cyano or carboxy group at the 2-, 5-, 6-, 7- or 8-position as available; or~~

~~it is substituted by at least one trifluoromethoxy group; or~~

~~R¹ and R^{1a} together represent (C₁₋₂)alkylenedioxy;~~

R² is hydrogen, or (C₁₋₄)alkyl or (C₂₋₄)alkenyl optionally substituted with 1 to 3 groups selected from:

amino optionally substituted by one or two (C₁₋₄)alkyl groups; carboxy; (C₁₋₄)alkoxycarbonyl; (C₁₋₄)alkylcarbonyl; (C₂₋₄)alkenyloxy carbonyl; (C₂₋₄)alkenylcarbonyl; aminocarbonyl wherein the amino group is optionally substituted by hydroxy, (C₁₋₄)alkyl, hydroxy(C₁₋₄)alkyl, aminocarbonyl(C₁₋₄)alkyl, (C₂₋₄)alkenyl, (C₁₋₄)alkylsulphonyl, trifluoromethylsulphonyl, (C₂₋₄)alkenylsulphonyl, (C₁₋₄)alkoxycarbonyl, (C₁₋₄)alkylcarbonyl, (C₂₋₄)alkenyloxy carbonyl or (C₂₋₄)alkenylcarbonyl; cyano; tetrazolyl; 2-oxo-oxazolidinyl optionally substituted by R¹⁰; 3-hydroxy-3-cyclobutene-1,2-dione-4-yl; 2,4-thiazolidinedione-5-yl; tetrazol-5-ylaminocarbonyl; 1,2,4-triazol-5-yl optionally substituted by R¹⁰; 5-oxo-1,2,4-oxadiazol-3-yl; halogen; (C₁₋₄)alkylthio; trifluoromethyl; hydroxy optionally substituted by (C₁₋₄)alkyl, (C₂₋₄)alkenyl, (C₁₋₄)alkoxycarbonyl, (C₁₋₄)alkylcarbonyl,

(C₂₋₄)alkenyloxycarbonyl, (C₂₋₄)alkenylcarbonyl; oxo; (C₁₋₄)alkylsulphonyl; (C₂₋₄)alkenylsulphonyl; or (C₁₋₄)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₄)alkyl or (C₂₋₄)alkenyl;

R³ is hydrogen; or

R³ is in the 2-, 3- or 4-position and is:

trifluoromethyl; carboxy; (C₁₋₆)alkoxycarbonyl; (C₂₋₆)alkenyloxycarbonyl; aminocarbonyl wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₂₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; cyano; tetrazolyl; 2-oxo-oxazolidinyl optionally substituted by R¹⁰; 3-hydroxy-3-cyclobutene-1,2-dione-4-yl; 2,4-thiazolidinedione-5-yl; tetrazol-5-ylaminocarbonyl; 1,2,4-triazol-5-yl optionally substituted by R¹⁰; or 5-oxo-1,2,4-oxadiazol-3-yl; or

(C₁₋₄)alkyl or ethenyl optionally substituted with any of the substituents listed above for R³ and/or 0 to 2 groups R¹² independently selected from:

halogen; (C₁₋₆)alkylthio; trifluoromethyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylcarbonyl or (C₂₋₆)alkenylcarbonyl; amino optionally mono- or disubstituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, (C₂₋₆)alkenylsulphonyl or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl, hydroxy(C₁₋₆)alkyl, aminocarbonyl(C₁₋₆)alkyl or (C₂₋₆)alkenyl; oxo; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; or

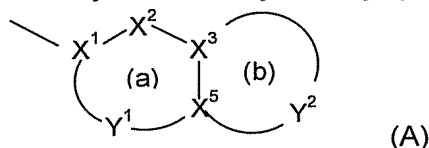
R³ is in the 2-position and is oxo; or

R³ is in the 3-position and is fluorine, amino optionally substituted by a group selected from hydroxy, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₂₋₆)alkenylsulphonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkoxycarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₁₋₆)alkyl and (C₂₋₆)alkenyl, wherein a (C₁₋₆)alkyl or (C₂₋₆)alkenyl moiety may be optionally substituted with up to 2 groups R¹², or hydroxy optionally substituted as described above for R¹² hydroxy; in addition when R³ is disubstituted with a hydroxy or amino containing substituent and carboxy containing substituent these may together form a cyclic ester or amide linkage, respectively;

R⁴ is a group -U-R⁵ where

U is selected from CO, SO₂ and CH₂ and

R⁵ is an optionally substituted bicyclic heterocyclic ring system (A):



wherein:

X³ and X⁵ are C;

ring (a) is optionally substituted pyrido in which X¹ is C, X² is N, and Y¹ is a 2 atom linker group each atom of which is independently selected from CR¹⁴; and

ring (b) is non-aromatic, Y² is a 4 atom linker group wherein S(O)_x is bonded to X⁵, NR¹³ is bonded via N to X³ and the other atoms are independently selected from CR¹⁴R¹⁵;

each of R¹⁴ and R¹⁵ is independently selected from: H; (C₁₋₄)alkylthio; halo; carboxy(C₁₋₄)alkyl; halo(C₁₋₄)alkoxy; halo(C₁₋₄)alkyl; (C₁₋₄)alkyl; (C₂₋₄)alkenyl; (C₁₋₄)alkoxycarbonyl; formyl; (C₁₋₄)alkylcarbonyl; (C₂₋₄)alkenyloxycarbonyl; (C₂₋₄)alkenylcarbonyl; (C₁₋₄)alkylcarbonyloxy; (C₁₋₄)alkoxycarbonyl(C₁₋₄)alkyl; hydroxy; hydroxy(C₁₋₄)alkyl; mercapto(C₁₋₄)alkyl; (C₁₋₄)alkoxy; nitro; cyano; carboxy; amino or aminocarbonyl optionally substituted as for corresponding substituents in R³; (C₁₋₄)alkylsulphonyl; (C₂₋₄)alkenylsulphonyl; or aminosulphonyl wherein the amino group is optionally mono- or di-substituted by (C₁₋₄)alkyl or (C₂₋₄)alkenyl; aryl; aryl(C₁₋₄)alkyl; aryl(C₁₋₄)alkoxy or R¹⁴ and R¹⁵ may together represent oxo;

each R¹³ is independently H; trifluoromethyl; (C₁₋₄)alkyl optionally substituted by hydroxy, (C₁₋₆)alkoxy, (C₁₋₆)alkylthio, halo or trifluoromethyl; (C₂₋₄)alkenyl; aryl; aryl (C₁₋₄)alkyl; arylcarbonyl; heteroarylcarbonyl; (C₁₋₄)alkoxycarbonyl; (C₁₋₄)alkylcarbonyl; formyl; (C₁₋₆)alkylsulphonyl; or

aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₄)alkoxycarbonyl, (C₁₋₄)alkylcarbonyl, (C₂₋₄)alkenyloxycarbonyl, (C₂₋₄)alkenylcarbonyl, (C₁₋₄)alkyl or (C₂₋₄)alkenyl and optionally further substituted by (C₁₋₄)alkyl or (C₂₋₄)alkenyl;

each x is independently 0, 1 or 2;

n is 0 and AB is NR¹¹CO, CO-CR⁸R⁹, CR⁶R⁷-CO, NHR¹¹SO₂, CR⁶R⁷-SO₂ or CR⁶R⁷-CR⁸R⁹, provided that R⁸ and R⁹ are not optionally substituted hydroxy or amino and R⁶ and R⁸ do not represent a bond;
or n is 1 and AB is NR¹¹CO, CO-CR⁸R⁹, CR⁶R⁷-CO, NR¹¹SO₂, CONR¹¹, CR⁶R⁷-CR⁸R⁹, O-CR⁸R⁹ or NR¹¹-CR⁸R⁹;

provided that R⁶ and R⁷, and R⁸ and R⁹ are not both optionally substituted hydroxy or amino;

and wherein:

each of R⁶, R⁷, R⁸ and R⁹ is independently selected from: H; (C₁₋₆)alkoxy; (C₁₋₆)alkylthio; halo; trifluoromethyl; azido; (C₁₋₆)alkyl; (C₂₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; (C₂₋₆)alkenyloxycarbonyl; (C₂₋₆)alkenylcarbonyl; hydroxy, amino or aminocarbonyl optionally substituted as for corresponding substituents in R³; (C₁₋₆)alkylsulphonyl; (C₂₋₆)alkenylsulphonyl; or (C₁₋₆)aminosulphonyl wherein the amino group is optionally substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl;

or R⁶ and R⁸ together represent a bond and R⁷ and R⁹ are as above defined;

R¹⁰ is selected from (C₁₋₄)alkyl; (C₂₋₄)alkenyl and aryl any of which may be optionally substituted by a group R¹² as defined above; carboxy; aminocarbonyl wherein the amino group is optionally substituted by hydroxy, (C₁₋₆)alkyl, (C₂₋₆)alkenyl, (C₁₋₆)alkylsulphonyl, trifluoromethylsulphonyl, (C₂₋₆)alkenylsulphonyl, (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl or (C₂₋₆)alkenylcarbonyl and optionally further substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl; and

R¹¹ is hydrogen; trifluoromethyl, (C₁₋₆)alkyl; (C₂₋₆)alkenyl; (C₁₋₆)alkoxycarbonyl; (C₁₋₆)alkylcarbonyl; or aminocarbonyl wherein the amino group is optionally substituted by (C₁₋₆)alkoxycarbonyl, (C₁₋₆)alkylcarbonyl, (C₂₋₆)alkenyloxycarbonyl, (C₂₋₆)alkenylcarbonyl, (C₁₋₆)alkyl or (C₂₋₆)alkenyl and optionally further substituted by (C₁₋₆)alkyl or (C₂₋₆)alkenyl;

or where one of R³ and R⁶, R⁷, R⁸ or R⁹ contains a carboxy group and the other contains a hydroxy or amino group they may together form a cyclic ester or amide linkage.

18. (Previously presented) A compound according to claim 17 wherein R^A is optionally substituted isoquinolin-5-yl, quinolin-8-yl, thieno[3,2-b]pyridin-7-yl, 2,3-dihydro-[1,4]dioxino[2,3-b]pyridin-8-yl, quinoxalin-5-yl, isoquinolin-8-yl, [1,6]-naphthyridin-4-yl, 1,2,3,4-tetrahydroquinoxalin-5-yl or 1,2-dihydroisoquinoline-8-yl.

19. (Previously presented) A compound according to claim 17 wherein R¹ is H, methoxy, methyl, cyano or halogen and R^{1a} is H.

20. (Previously presented) A compound according to claim 17 wherein R³ is hydrogen; optionally substituted hydroxy; optionally substituted amino; halogen; (C₁₋₄)alkoxycarbonyl; CONH₂; 1-hydroxyalkyl; CH₂CO₂H; CH₂CONH₂; -CONHCH₂CONH₂; 1,2-dihydroxyalkyl; CH₂CN; 2-oxo-oxazolidin-5-yl; or 2-oxo-oxazolidin-5-yl(C₁₋₄alkyl).

21. (Previously presented) A compound according to claim 17 wherein n is 0 and A and B are both CH₂, A is CHOH and B is CH₂ or A is NH and B is CO.

22. (Previously presented) A compound according to claim 17 wherein -U- is -CH₂-.

23. (Previously presented) A compound according to claim 17 wherein Y² has a group S bonded to X⁵ and a group NHCO bonded via N to X³.

24. (Previously presented) A compound according to claim 17 wherein R⁵ is 3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]thiazin-6-yl.

25. (Currently amended) A compound according to claim 17 selected from:
6-(((3R,4S)-3-Fluoro-1-[(R)-2-hydroxy-2-(2-methoxy-quinolin-8-yl)-ethyl]-piperidin-4-ylamino)-methyl)-4H-pyrido[3,2-b][1,4]thiazin-3-one;
6-(((3S,4R)-3-Fluoro-1-[(R)-2-hydroxy-2-(2-methoxy-quinolin-8-yl)-ethyl]-piperidin-4-ylamino)-methyl)-4H-pyrido[3,2-b][1,4]thiazin-3-one;
6-(((3R,4R)-3-Hydroxy-1-[(R)-2-hydroxy-2-(2-methoxy-quinolin-8-yl)-ethyl]-piperidin-4-ylamino)-methyl)-4H-pyrido[3,2-b][1,4]thiazin-3-one;

6-((3S,4S)-3-Hydroxy-1-[(R)-2-hydroxy-2-(2-methoxy-quinolin-8-yl)-ethyl]-piperidin-4-ylamino)-methyl)-4H-pyrido[3,2-b][1,4]thiazin-3-one;
~~6-((3R,4S)-1-[2-(2,3-Dihydro-[1,4]dioxino[2,3-f]quinolin-10-yl)-ethyl]-3-fluoro-~~
~~piperidin-4-ylamino)-methyl)-4H-pyrido[3,2-b][1,4]thiazin-3-one;~~
6-[(1-[(2R/S)-2-hydroxy-2-[3-(methyloxy)-5-quinoxaliny]ethyl]-4-piperidinyl)amino)methyl]-2H-pyrido[3,2-b][1,4]thiazin-3(4H)-one;
6-[(1-[2-(4-quinolinyl)ethyl]-4-piperidinyl)amino)methyl]-2H-pyrido[3,2-b][1,4]thiazin-3(4H)-one;
4-[2-(3-hydroxy-4-[(3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]thiazin-6-yl)methyl]amino)-1-piperidinyl)ethyl]-6-quinolinecarbonitrile (isomer E2); and
4-[2-(3-hydroxy-4-[(3-oxo-3,4-dihydro-2H-pyrido[3,2-b][1,4]thiazin-6-yl)methyl]amino)-1-piperidinyl)ethyl]-6-quinolinecarbonitrile(E1 isomer);
or a pharmaceutically acceptable derivative thereof.

26. (Currently amended) A method of treatment of bacterial infections in mammals, ~~particularly in man~~, which method comprises the administration to a mammal in need of such treatment an effective amount of a compound according to claim 17.

27. (Previously presented) A pharmaceutical composition comprising a compound according to claim 17, and a pharmaceutically acceptable carrier.

28. Canceled.

29. (New) A compound according to claim 17 wherein R^A is unsubstituted quinolin-4-yl, or quinolin-4-yl substituted by a cyano in the 6-position.

30. (New) A compound according to claim 17 wherein R^A is optionally substituted quinolin-8-yl.

31. (New) A compound according to claim 17 wherein R^A is optionally substituted quinoxalin-5-yl.

32. (New) A method of treatment of bacterial infections in mammals, ~~particularly in man~~, which method comprises the administration to a mammal in need of such treatment an effective amount of a compound according to claim 25.

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33. (New) A pharmaceutical composition comprising a compound according to claim 25, and a pharmaceutically acceptable carrier.